

Director's Message

Throughout September, Penn Medicine's Ovarian Cancer Research Center (OCRC) observed Ovarian Cancer Awareness Month with our continued public outreach programs to raise awareness. Understanding early signs and symptoms of this disease and expanding our efforts in research and patient care are the pillars of our mission. Ovarian Cancer Awareness Month is also a time to recognize patients who are bravely fighting gynecologic cancer, remember those who sadly succumbed to it, and share the progress we have made for treatment and prevention options—providing hope to future patients and families.

The OCRC serves as a catalyst to promote comprehensive and interdisciplinary research on ovarian cancer, with an elite team of gynecologic oncology surgeons (led by Dr. Mark Morgan), medical oncologists, radiation oncologists, pathologists, radiologists, and nurses who work collaboratively in a dedicated effort to find treatment options that will improve outcomes and better the lives of patients. The OCRC is a comprehensive entity dedicated to not only provide patients with the most innovative therapies, but also hone early detection methods which are crucial in the fight against gynecologic malignancies, particularly ovarian cancer.

This issue of the OCRC Newsletter features a Q&A with Dr. Lin Zhang, whose research focuses on exploring targeted therapy for ovarian and breast cancers through understanding the cancer genome, epigenome, and non-coding RNAs. You will also read a research update on a novel cancer prevention approach known as the Women Choosing Surgical Prevention (WISP) trial, aimed at preventing ovarian cancer. Enjoy event highlights, such as the 2018 Breakthrough Bike Challenge with team Gyn Onc (GO) Discover and the No Evidence of Disease (N.E.D.) concert—an event featuring the musical talents of five gynecologic oncologists.

We look forward to sharing our advancements and successes with you.

Ronny Drapkin, MD, PhD

Franklin Payne Associate Professor of Pathology in Obstetrics & Gynecology
Director, Penn Ovarian Cancer Research Center



Drs. Drapkin (left) and Morgan (right) are working closely together to create laboratory and clinical resources that will drive the development of new methods for early detection of ovarian cancer and novel therapies to tackle recurrent disease.

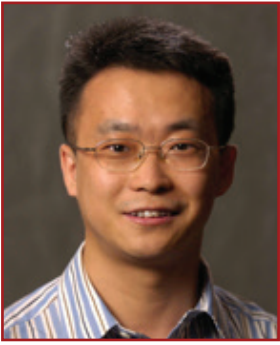
Announcing the OCRC Tumor BioTrust Collection

In our spring 2018 issue, we highlighted our recently launched Translational Center of Excellence (TCE) for Ovarian Cancer. The TCE was awarded by the Abramson Cancer Center, with support from the Department of Obstetrics and Gynecology. One of the key priorities of the TCE is to encourage our patients to participate in our tumor banking program. Tumor tissue is at the core of our research efforts. It enables us to examine the cancer genome and epigenome, create new animal models for drug discovery and develop innovative approaches to early detection and prevention. Our patients trust us to maximize the use of this tissue in real time. Therefore, we are thrilled to announce the opening of the Tumor BioTrust Collection website.

This site is a Perelman School of Medicine approved service, intended to provide access to tissues and biological fluids to investigators at Penn Medicine and beyond to help advance early detection, diagnostics, and therapeutics for ovarian cancer. We work closely with Penn's gynecologic oncologists and pathologists to consent patients and collect tissue. We hope this BioTrust will be a catalyst for collaboration and discovery.

To learn more about this initiative, please visit www.med.upenn.edu/OCRCBioTrust.





An Interview with Lin Zhang, MD

Harry Field Research Professor

How would you explain the broader significance of your research to a layperson?

The human genome is made up of six billion individual DNA “letters” that are packaged into chromosomes, making up genes, the fundamental elements in our cells. Interestingly, only 2% of our genome encodes for proteins. The vast majority of our DNA is transcribed into RNA molecules that do not code for proteins, but function in crucial ways to regulate cellular function. These non-coding RNAs are the focus of my research. In particular, I am interested in long non-coding RNAs (lncRNAs) and their role in ovarian cancer.

My lab has demonstrated that the expression of lncRNA is frequently dysregulated in ovarian cancer, and that expression patterns of lncRNA are strikingly cancer type-specific. In addition, due to their secondary structures, lncRNAs are very stable in blood. Sensitive methods are readily available for lncRNA quantification, which make them a great biomarker candidate for early detection. In fact, our ongoing work indicates that certain lncRNAs are ideal for early detection strategies that may significantly improve outcomes for patients and their families.

What does an average day as a scientist look like for you?

I typically start my day with an early morning run to clear my mind and mentally prepare for the day. The first half of my day is spent in my office working on papers and grant applications. I also use that time to stay current on the latest scientific literature and to meet with my trainees and collaborators. I typically spend the afternoon in the lab, or working with my trainees to answer questions about their projects, and discuss experiment design. Towards the end of the day, I go back to my office to work on grant and paper reviews for scientific journals, foundations, and the NIH. My days are long but I love what I do and there never seems to be enough time to do all the things I want to do. I’m passionate about my research, and so excited to face the challenges in my work each day.

What led you to gynecologic oncology?

When I was a medical student in China, the first patient I met was one with ovarian cancer. The lack of early detection tools and effective therapy left an impression on me. Since then, I decided to dedicate my career to the field of gynecologic oncology and I hope that my contributions will have a meaningful impact on patient care.

How many years have you been at Penn’s Ovarian Cancer Research Center (OCRC)?

I’ve been at Penn’s OCRC since it was established in 2007. I’ve witnessed the growth and achievements of the center during the last ten years. It provides a great environment and generous support to scientists to conduct cutting-edge research. My career began and matured here.

Who have been your most influential mentors in your career so far?

My advisor in medical school, Dr. Li Shen, guided me to the field of science. When I came to Penn, Dr. George Coukos, the founder and first director of Penn’s OCRC was my postdoc mentor. There have also been many exceptionally smart and inspiring people at Penn and other institutions that have inspired me at every step of my career. I’ve been very fortunate to learn from and collaborate with these extraordinary scientists.

What has been your proudest moment or greatest achievement so far in your career?

I’ve been fortunate to have had many special moments in my career. I’m particularly proud to be a mentor and a previous mentee in the OCRC. I’m also proud that my work has been recognized by peer scientists and that I’ve been a leader in my research area.

What is your hope for the future of ovarian cancer research?

I hope that the advances of science and technology will help us develop ways to diagnosis and treat ovarian cancer more effectively. I hope we can fill the gap between basic research and clinical practice to accelerate the process from the bench to the bedside and bring hope to patients and their families.

When you are not in your lab, what are your hobbies?

I’m a good photographer and I enjoy traveling. I enjoy combining these two passions to capture the beauty of nature and to record memorable moments with my camera. I also enjoyed spending time at the beach with family during the summer time.

A Promising Study to Help Improve Surgery as a Form of Prevention

At Penn's Ovarian Cancer Research Center (OCRC), scientists and clinicians are working together to not only create life-saving treatments, but also improve quality of life for patients who have a high likelihood of developing ovarian cancer.

Currently, the recommended action for patients with genetic mutations that make them high-risk for ovarian cancer is the removal of the ovaries and fallopian tubes. With risk-reducing salpingo-oophorectomy (RRSO), the fallopian tubes and ovaries are removed at the same time—which can be consequential for women who have not yet reached menopause, as they may experience symptoms and long-term side effects of early-onset menopause. We are working to create better preventative options that will avoid or delay these side effects.

New research suggests that many ovarian cancers may actually begin in the fallopian tubes. This revelation has led patients and researchers to wonder if they can keep the ovaries until closer to natural menopause, while still lowering their risk of cancer by only removing the fallopian tubes—followed by ovarian removal several years later.

In order to explore this novel idea, Penn's OCRC has joined the **Women Choosing Surgical Prevention (WISP)** Trial. The goal of the WISP study is to compare whether removing only the fallopian tubes and delaying the removal of the ovaries can safely improve sexual functioning and menopausal symptoms compared to standard risk-reducing removal of the ovaries and fallopian tubes. This study, which launched in 2016 with the partnership of seven cancer centers across the country, will ultimately comprise 300 patients in total—with 45 being enrolled at Penn. Penn investigators include: **Sarah Kim, MD**, **Ashley Haggerty, MD**, and **Ronny Drapkin, MD, PhD**. Patients include women aged 30 to 50.

In addition to examining female sexual function and menopausal symptoms, this study will estimate quality of life, as well as participants' satisfaction level and cancer worry level with their choice of prophylactic procedures. It is important to understand patients' mental health while studying and comparing physical treatments, and it is our hope that this study will result in an effective, less severe preventative surgery option while allowing women to maintain control of their sexual and reproductive health.

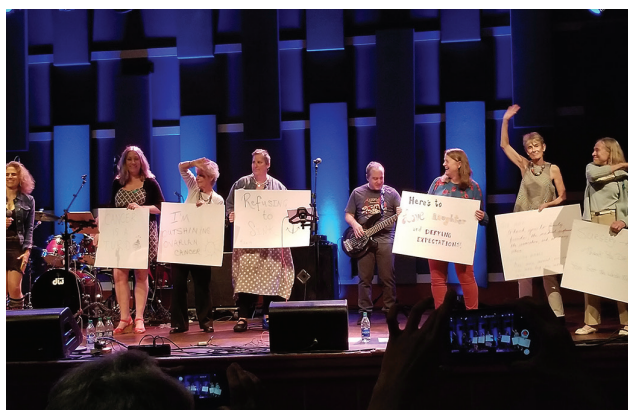
No Evidence of Disease: A Benefit Concert Raising Funds for Gynecologic Oncology Research

No Evidence of Disease (N.E.D.) are the words every cancer patient wants to hear and also the name of a unique band of gynecologic oncologists. Education is a core mission of this group of physicians from around the country who have united to hone their talents to raise awareness through music.

On September 20th at World Cafe Live, N.E.D. united for a concert in collaboration with the Abramson Cancer Center, the Sandy Rollman Ovarian Cancer Foundation, and the Foundation for Women's Cancers. The evening featured a pre-concert storytelling event with TESARO and The Moth highlighting stories of those affected by recurrent ovarian cancer. Storytellers Dr. Lainie Martin, Nora McMahon and Katya Lezin shared inspiring anecdotes of their formative experiences with gynecologic cancers.

The evening concluded with a full set of N.E.D.'s original music featuring songs with messages that empower women to speak out and raise awareness for gynecologic cancers. Proceeds from the concert will support the groundbreaking work at Penn Medicine's Ovarian Cancer Research Center and Clinical Research Unit, as well as the Sandy Rollman Ovarian Cancer Foundation, and the Foundation for Women's Cancers. To learn more or support N.E.D. visit

www.nedtheband.com

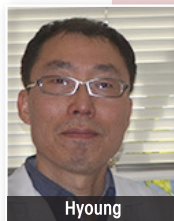


Pedaling Towards a Cure with the Breakthrough Bike Challenge

Team Gyn Onc (GO) Discover banded together once again to support the Abramson Cancer Center's Breakthrough Bike Challenge. Captained by Dr. Ronny Drapkin, team GO Discover raised over \$5,000 to help support junior faculty doing cutting-edge cancer research.



A **SHOUT OUT** to Our Trainees!



Sarah Gitto, a postdoctoral fellow co-mentored by Drs. Dan Powell and Fiona Simpkins, was awarded a 2019 Ann and Sol Schreiber Mentored Investigator Award from the Ovarian Cancer Research Alliance (OCRA). **Alba Rodriguez-Garcia**, a postdoctoral fellow in the Powell lab, was also awarded an Ann and Sol Schreiber Mentored Investigation Award from OCRA.

Hyoung Kim, (Simpkins lab), **Erin George** (Simpkins lab), and **Jagmohan Hooda** (Drapkin lab) had a plenary presentation at the 12th Biennial Ovarian Cancer Research Symposium (September 2018 in Seattle, WA) sponsored by the Rivkin Center for Ovarian Cancer and the American Association for Cancer Research. Plenary presentations at this meeting are highly competitive and we are very proud of our trainees for representing our Center so well.



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Please consider becoming a philanthropic partner!
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